Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (*Currently amended*) A method for optical imaging of a light scattering object, the method comprising steps of;

i) injecting a pulse of light at an injection port into said object at a time t_o; and

ii) staggering collection of ~~collecting~~ light from said object ~~at~~ over a plurality of collection ports to provide a plurality of sequential time-gated optical signal based temporal point spread functions

~~iii) introducing a relative temporal delay to the optical signal temporal point spread functions; and~~

~~iv)~~ simultaneously ~~detecting at least one time gate of each said temporal point spread function to provide information to be used in producing an optical image of said light scattering object, wherein the at least one time gates are detected simultaneously~~.

2. (*Canceled*)

3. (Previously presented) The method as claimed in claim 1 wherein said plurality of collection ports are adjacent to one another and said temporal point spread functions are substantially identical.

4. (Currently amended) The method as claimed in claim 3 wherein said ~~time-gates~~ time-gated signals span a time interval defined by an initial time and a final time which are set relative to t_o.

5. (*Currently amended*) The method as claimed in claim 4 wherein said ~~selected time-gates are used~~ staggering collection is performed for a plurality of injection port/object/detector port geometries.

6. (*Currently amended*) The method as claimed in claim 5 wherein said ~~time-gates are selected~~ staggering is based on one or more optical properties of said object.

7. (*Currently amended*) The method as claimed in claim 5 wherein said initial time and said final time of said ~~selected time-gates~~ time-gated signals are estimated based on one or more optical properties of said object that influence propagation of said light within said object.

8. (*Original*) The method according to claim 7 wherein said one or more properties comprise thickness of said object.

9. (Currently amended) The method as claimed in claim 1 wherein said ~~selection~~ staggering collection of said ~~time-gates~~ time-gated signals comprises:
i) obtaining at least a first derivative of each temporal point spread function; and
ii) identifying one or more time intervals of each temporal point spread function in which a first derivative is zero at a point in said time interval thereby effecting said ~~selection~~ staggering collection of said ~~time-gates~~ time-gated signals.

10. (*Canceled*).

11. (Currently amended) The method as claimed in claim 9 wherein said ~~selected time-gates~~ time-gated signals are further selected based on an order of said derivative.

12. (Currently amended) The method as claimed in claim 1 wherein said ~~selection~~ staggering collection of said ~~time-gates~~ time-gated signals comprises:

i) obtaining one or more temporal point spread functions for each of a plurality of light scattering objects;

ii) obtaining at least a first derivative of each temporal point spread function;

iii) identifying one or more time interval of each temporal point spread function in which said at least first derivative is zero at a point in said time interval thereby effecting said ~~selection~~ staggering collection of said ~~time-gates~~ time-gated signals;

iv) retrievably storing said ~~selected~~ ~~time-gates~~ time-gated signals such that said ~~selected~~ ~~time-gates~~ time-gated signals are associated with at least one predetermined characteristic of a corresponding object; and

v) matching a characteristic of a new object to be imaged with said stored predetermined characteristics to identify corresponding ~~selected~~ ~~time-gates~~ time-gates to be used in imaging said new object.

13. (*Currently amended*) The method as claimed in claim 1 wherein said step of ~~detecting~~ staggering collection is performed using a time-gated detector.

14. (*Original*) The method as claimed in claim 13 wherein the time-gated detector is an ICCD camera.

15. (Currently amended) The method as claimed in claim 1 wherein the two or more ~~time-gates~~ time-gated signals are simultaneously detected at two or more time-gated detectors having a synchronized acquisition time gate.

16. (*Original*) The method as claimed in claim 15 wherein the step of simultaneously detecting comprises detecting said selected time-gates using a time-gated detector comprising a 2-dimensional array of pixels.

17. (Previously presented) The method as claimed in claim 16 wherein the time-gated detector is an ICCD camera.

18. (*Original*) The method as claimed in claim 1 wherein the collecting of the light is achieved by providing one or more optical fibers.

19. (Previously presented) The method as claimed in claim 18 further comprising adjusting a relative length of the fibers to introduce the relative temporal delay.

20. (*Original*) The method as claimed in claim 19 wherein the fibers are grouped together into one or more bundles.

21. (*Original*) The method according to claim 20 wherein each fiber in the one or more bundles is directed to a distinct detection position of the time-gated detector or to a distinct time-gated detector.

22. (*Original*) The method as claimed in claim 21 wherein the one or more bundles are spatially localized such as to collect light from one or more desired areas of said object.

23. (*Original*) The method as claimed in claim 22 wherein the one or more bundles are coupled to one or more time-gated detectors.

24. (Currently amended) A system for optical imaging of a light scattering object, the system comprising:

i) at least one light injection port; and

ii) a light collecting apparatus to stagger collection of light from said object at a plurality of collection ports ~~to~~ and provide a plurality of sequential time-gated optical signal based temporal point spread functions~~;~~

~~iii) an optical delay feature that creates a relative optical delay between the optical signal temporal point spread functions; and~~

~~iv) one or more time-gated detectors for detecting at least one time gate of each said delayed temporal point spread function to provide information to be used in producing an optical image of said light scattering object, wherein the at least one time gates are detected simultaneously~~.

25. (Previously presented) The system according to claim 24 wherein the collection ports are adjacent to one another.

26. (Previously presented) The system as claimed in claim 25 wherein the light collecting apparatus comprises one or more optical fibers.

27. (Previously presented) The system as claimed in claim 26 wherein the optical delay feature comprises a difference in the relative lengths of the optical fibers.